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U. S. DEPARTMENT OF AGRICULTURE

WATCHING THE WEATHER WITH UNCLE SAM

The fifth of a series of ten talks by Welby R. Stevens, assistant forecaster, United States Weather Bureau, delivered through Station WRC and 32 other stations associated with the National Broadcasting Company, January, 13, 1930 at 1:10 p.m. Eastern Standard Time.

We shall now tell you how the charts are prepared from which the forecaster makes his predictions and summaries. While the following statements refer to the five district forecast centers, it should be borne in mind that the same sort of work on a considerably smaller scale is done at a large number of other stations throughout the country.

Shortly after 8 a.m.^{and 8 p.m.} every day in the year, observations from all over the United States, Canada, Alaska, Greenland, Iceland, the West Indies and from many vessels at sea, begin to arrive in a steady stream. This is the way the work is done at the forecast center in Washington. As fast as the reports come from the wires they are passed to the forecast room, where the translator decodes them rapidly to five expert and highly trained employees seated in front of blank maps. Each man copies the data needed for his map. One of them constructs a chart showing the change in temperature during the last 24 hours, and the departure from normal. Another constructs the barometer map which shows the change in pressure during the last 12 hours. A third man prepares the cloud chart showing the air pressure and cloud data. A fourth man decodes what we call upper air reports from about 50 stations and enters the wind direction and velocity on separate maps, the first for the surface, the 2d for 250 meters, then for 500 meters, then 1000, 1500, 2000, 3000, and finally 4000 meters, or about 2-1/2 miles above the ground. The way in which these observations are obtained has been explained in a previous talk of this series. The fifth man enters data on the general weather chart, showing for each station the air pressure and temperature, the direction and velocity of the wind, the rain- or snow-fall since the last observation, and the amount of cloudiness. This is the most important chart of all. Before all these reports have been translated the forecaster begins drawing lines on the weather chart, even while the chart man is entering data. Lines called isobars are drawn through adjacent places which have the same barometric pressure, and isotherms are drawn through adjacent places which have the same temperature. The isobars constitute the most important feature of the map. They are drawn for each tenth of an inch difference in pressure. For example, the line marked 30 passes through points where the barometer readings are all exactly 30 inches. On one side of this line the readings are higher than 30 inches and are drawn for each tenth of an inch increase until a crest or center is located and marked HIGH. On the other side the pressures are less than 30 inches and are drawn for each tenth of an inch decrease until the center is located and marked LOW.

The work in the forecast room proceeds with the greatest possible speed and by 8:45 or 9:00 o'clock all the regular reports are entered and the necessary lines drawn, so that the forecaster may begin to give consideration to the various data that enter into the preparation of the forecasts. At about 9:15 he begins to dictate his forecasts and from then until 10:00 o'clock an almost unbelievable number of forecasts are made and distributed by telegraph and radio.

On next Thursday we shall tell you some of the characteristics of high and low pressure areas.

